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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/871,250	06/01/2001	Ryoichi Ohkura	010718	8231

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EXAMINER

PERRIN, JOSEPH L

ART UNIT PAPER NUMBER

1746

DATE MAILED: 03/06/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/871,250

Applicant(s)

OHKURA ET AL.

Examiner

Joseph Perrin, Ph.D.

Art Unit

1746

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 June 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☒ Claim(s) 2,3,7 and 9-12 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

1. It is noted that an Information Disclosure Statement under 37 CFR 1.97 for the present application has not been received by the Office. If Applicant believes this to be in error, Applicant is urged to submit documentation supporting a proper filing of any previously submitted information disclosure statements in order to have such disclosures considered by the Office.

Drawings

2. This application has been filed with informal drawings which are acceptable for examination purposes only. Formal drawings will be required when the application is allowed.

3. The drawings filed on 01 June 2001 are acceptable subject to correction of the informalities indicated on the attached "Notice of Draftperson's Patent Drawing Review," PTO-948.

Specification

4. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The

Art Unit: 1746

abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

5. The abstract of the disclosure is objected to because the abstract exceeds 150 words. Correction is required. See MPEP § 608.01(b).

6. In addition, the reference numbers/letters should be enclosed in parentheses. Correction is required.

7. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Objections

8. The claims are objected to because they include reference characters which are not enclosed within parentheses.

Reference characters corresponding to elements recited in the detailed description of the drawings and used in conjunction with the recitation of the same element or group of elements in the claims should be enclosed within parentheses so as to avoid confusion with other numbers or characters which may appear in the claims. See MPEP § 608.01(m).

9. Claim 2 is objected to because of the following informalities: In lines 3-4, the phrase "system body system body" should be --system body--. In line 5, the term "sandwiched" should be --sandwich--. Appropriate correction is required.

10. Claims 3 and 9 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim.

Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Apparatus claim 3, which appears to be directed to a process of aligning substrates (i.e. "the substrates... are aligned"), fails to provide further structural limitation to the claimed cleaning apparatus. Apparatus claim 9, which appears to be directed to a process of applying a coating treatment (i.e. "coating... is applied"), fails to provide further structural limitation to the claimed cleaning apparatus. Accordingly, claims 3 and 9 have not been further treated on the merits.

Claim Rejections - 35 USC § 112

11. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

12. Claims 1-12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In the last line of claim 1, the phrase "having a required minimum cross sectional area", in reference to the partition walls, is considered vague and indefinite. It is unclear

what is meant by "required minimum". Applicant has not defined the metes and bounds of the claimed patent protection sought. As best understood, the mere existence of partition walls is construed as having a minimum cross-sectional area, and the claims will be examined accordingly. However, clarification and correction are still required.

In claim 2, the phrase "installed back and forth at both sides of the system body" is considered vague and indefinite. This phrase does not make sense. Moreover, it is unclear how a loading/unloading booth or a robot booth may be each installed at two separate sections (i.e. both sides) of the system body.

Claim Rejections - 35 USC § 102

13. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

14. Claims 1, 2, 6 and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by EP 0 982 098 A2 to Ebara Corporation.

Re claims 1, 6 and 8, Ebara discloses a substrate cleaning system having a system body (housing) with booths (units) separated by partition walls (for instance, Figures 1,6,7); the system body comprising a loading/unloading booth with a substrate carry-in section (loading unit 11) and a substrate carry-out section (unloading unit 12), a processing booth with substrate cleaning chamber (washing unit 15 or polish units 13 & 14), and a robot booth with transfer robot 10 having twin arms 10-1 & 10-2 (for instance,

Art Unit: 1746

Figures 1, 6, 7 and col. 7, lines 16-35); the robot movable vertically and horizontally (for instance, Figures 6-7); a substrate reversing unit (for instance, col. 6, lines 28-33).

Re claim 2, Ebara discloses robot booth 10 sandwiched between loading/unloading booth 11/12 and processing/washing booth 15 (for instance, Figures 1, 6 and 7) and that the system may be sealed/covered by a housing as in a clean room (for instance, col. 11, lines 22-27). Although, Ebara does not expressly disclose the loading/unloading booth having closing openings, the position is taken that the loading/unloading booth of Ebara must inherently include closing openings in order to load/unload substrates to the sealed/covered system.

Claim Rejections - 35 USC § 103

15. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

16. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Art Unit: 1746

17. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

18. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ebara, as applied above, in view of US 5,829,939 to Iwai et al.

Recitation of Ebara is repeated here from above. Although Ebara discloses a covered/sealed system and utilizing clean room condition, Ebara does not expressly disclose the loading/unloading booth having substrate holding sections and an elevation positioning unit.

Iwai et al. teaches that it is known to utilize loading and unloading booths 30 (for instance, Figure 4) each with substrate holding table 38 and elevation (vertical) positioning means 41 in order to load and unload wafers in a wafer processing system while maintaining an inert atmosphere (see, for instance, Figures 1 & 4; col. 9, lines 6-13; col. 35, lines 35-50). Therefore, the position is taken that a person of ordinary skill in the art at the time the invention was made would have been motivated to modify the system, disclosed by Ebara, with the loading/unloading booth disclosed by Iwai et al. for

Art Unit: 1746

the purpose of providing a sealed wafer treating system with improved cleanliness at the loading/unloading interface.

Allowable Subject Matter

19. Claims 7 and 10-12 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action, and if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

20. The following is a statement of reasons for the indication of allowable subject matter: The closest prior art of record do not disclose the claimed substrate cleaning system having substrate holding sections with soft landing type supporters, as in claim 7, or a vertically moving chamber body and multiple vertically aligned processing baths, as in claim 10.

Conclusion

21. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US 2001/0010950 to Savage et al., which discloses a wafer processing system with vertically stacked process chambers and dual wafer transfer system.

US 5,975,097 to Yonemizu et al., which discloses a substrate processing apparatus with a wafer transfer system sandwiched between a loading/unloading area and a processing area.

US 5,518,542 to Matsukawa et al, which discloses a substrate cleaning apparatus with loading/unloading area, robot arm, and cleaning areas.

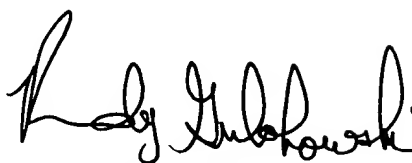
22. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph Perrin, Ph.D. whose telephone number is (703)305-0626. The examiner can normally be reached on M-F 7:30-5:00, except alternate Fridays.

23. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski can be reached on (703)308-4333. The fax phone numbers for the organization where this application or proceeding is assigned are (703)872-9310 for regular communications and (703)872-9311 for After Final communications.

24. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0661.

Joseph Perrin, Ph.D.
Examiner
Art Unit 1746

jlp
March 3, 2003


RANDY GULAKOWSKI
SUPERVISORY PATENT EXAMINER
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